

What is Claimed is:

1. A liquid crystal screen display comprising:
a first insulating substrate;
a second insulating substrate facing the first insulating substrate;
a liquid crystal layer formed between the first and second insulating substrates;
alignment layers formed between the first insulating substrate and the liquid crystal layer and between the second insulating substrate and the liquid crystal layer, respectively, for aligning the liquid crystal layer; and
a first conductive member which is formed between at least either one of the first and second insulating substrates and its corresponding alignment layer, being in partial contact with the alignment layer and to which a negative voltage is applied.
2. The liquid crystal screen display according to claim 1, wherein the first conductive member is formed on the first insulating substrate.
3. The liquid crystal screen display according to claim 2, wherein the first conductive member is gate signal lines.
4. The liquid crystal screen display according to claim 1, wherein regions accounting for 10 to 50% of the first conductive member are in contact with the alignment layer.
5. The liquid crystal screen display according to claim 3, wherein an oxidation layer is formed in the regions of

the gate signal lines where the gate signal lines respectively intersect source signal lines.

6. The liquid crystal screen display according to claim 1, wherein the first conductive member is formed on the second insulating substrate.

7. The liquid crystal screen display according to claim 6, wherein pixel electrodes and counter electrodes for applying a voltage to a liquid crystal of the liquid crystal layer are formed on the first insulating substrate.

8. The liquid crystal screen display according to claim 1, further comprising a light blocking layer formed on the first or second insulating substrate,

wherein the first conductive member is formed so as to overlap with the light blocking layer in a plan view of the display.

9. The liquid crystal screen display according to claim 1, further comprising a second conductive member which is disposed between at least either one of the first and second insulating substrates and its corresponding alignment layer, being in partial contact with the alignment layer, and to which a voltage higher than the negative voltage applied to the first conductive member is applied.

10. The liquid crystal screen display according to claim 9, wherein the second conductive member is formed on the first insulating substrate.

11. The liquid crystal screen display according to claim

10, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the first insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes;

wherein the second conductive member is the pixel electrodes.

12. The liquid crystal screen display according to claim 10, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the first insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes;

wherein the second conductive member is the counter electrodes.

13. The liquid crystal screen display according to claim

10, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the first insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes;

wherein the second conductive member is the pixel electrodes and the counter electrodes.

14. The liquid crystal screen display according to claim 10, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the second insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes;

wherein the second conductive member is the pixel electrodes.

15. The liquid crystal screen display according to claim

9, wherein the second conductive member is formed on the second insulating substrate.

16. The liquid crystal screen display according to claim 15, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the first insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes.

17. The liquid crystal screen display according to claim 15, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the second insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes;

wherein the second conductive member is the counter electrodes.

18. The liquid crystal screen display according to claim 9, further comprising a light blocking layer formed on the first or second insulating substrate,

wherein the second conductive member is formed so as to overlap with the light blocking layer in a plan view of the display.

19. The liquid crystal screen display according to claim 1, further comprising a catalyst placed in the vicinity of the first conductive member in contact with its corresponding alignment layer, for reducing activation energy caused by the reaction between unionized liquid crystal molecules and ionized liquid crystal molecules.

20. The liquid crystal screen display according to claim 19, wherein the catalyst includes a metal oxide.

21. The liquid crystal screen display according to claim 19, wherein the catalyst includes a precious metal.

22. The liquid crystal screen display according to claim 19, wherein the catalyst includes an organic semiconductor compound.

23. The liquid crystal screen display according to claim 1, further comprising an ion absorber provided for the second insulating substrate.

24. The liquid crystal screen display according to claim 23, further comprising:

a switching element formed on the first insulating substrate, the switching element having a source electrode

connected to the source signal lines, a gate electrode connected to the gate signal lines and a drain electrode connected to the pixel electrodes; and

counter electrodes formed on the first insulating substrate for applying a voltage to a liquid crystal of the liquid crystal layer between the counter electrodes and the pixel electrodes.

25. A liquid crystal screen display comprising:
a first insulating substrate;
a second insulating substrate facing the first insulating substrate;

a liquid crystal layer formed between the first and second insulating substrates; and
an electrolyte added to the liquid crystal layer.

26. The liquid crystal screen display according to claim 25, wherein the electrolyte is a compound given by the chemical formula, $(t\text{-Bu})_4\text{NX}$.

27. The liquid crystal screen display according to claim 26, wherein X of the chemical formula is halogen.

28. The liquid crystal screen display according to claim 27, wherein X of the chemical formula is COOR (in which R is hydrogen, a hydro carbon group or alkali metal).